

ANNUAL REPORT
ON THE
SANITARY CONDITION
OF
MERTHYR TYDFIL
DURING THE YEAR 1900.

PRESENTED TO THE
Merthyr Tydfil Urban District Council.

Medical Officer :
C. E. G. SIMONS, M.B., D.P.H.

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1901.



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MERTHYR TYDFIL URBAN DISTRICT COUNCIL.

[CHAIRMAN 1900-1901: T. E. MORGAN, Esq., J.P., Dowlais.]

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Councillor JOSEPH OWEN,	Councillor D. W. JONES,
Councillor N. F. HANKEY,	Councillor DAVID EVANS,
Councillor ARTHUR DANIEL,	Councillor C. M. DAVIES,
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CHAIRMAN OF COMMITTEE, 1900:

Councillor JOS. OWEN.

Medical Officer of Health:

C. E. G. SIMONS, M.D., D.P.H.

Sanitary Staff:

Mr. JOHN THOS. OWEN, C.S.I.,	Chief Inspector.
Mr. MILTON THOMAS, C.S.I.,	Assistant Inspector.
Mr. H. LL. JENKINS, C.S.I.,	„ „
Mr. JOHN JONES,	„ „

Fever Hospitals:

Pant Hospital—Medical Superintendent:

Dr. C. E. G. SIMONS, M.O.H.

Caretaker—Vacant.

Brecon Road Hospital—Medical Superintendent:

Dr. C. E. G. SIMONS, M.O.H.

Caretaker—Mr. T. MACNAMARA.

ANNUAL REPORT

UPON THE

SANITARY CONDITION OF MERTHYR TYDFIL

For the Year 1900.

To the Chairman and Councillors of the District Council.

GENTLEMEN,

The Sanitary District of Merthyr Tydfil lies in the valley of the Taff, the geological situation being upon the northern outcrop of the coal measures, and on the coal measures themselves.

Numerous faults extend through the coal measures which run through the district with a general direction from N.W. to S.E. On many of the faults are lines of springs, which have a general tendency to form small watercourses. These watercourses have in parts of the district been covered and converted into culverts, and into these culverts house drains have frequently been connected, with the result that some of the older culverts became more offensive than the sewers. This condition is from year to year being improved, and in the course of time I hope that all these old connections will be discovered, and proper connections be made to the sewers instead.

Part of the district lies on the narrow strip of alluvium in the Taff river bed; the remainder resting either on stiff boulder-clay or upon the compact sandstones of the coal measures, or on the intermediate layers of shales and fireclays intervening between the coal deposits. Where these fireclays crop out springs are of common occurrence, and where these springs occur rheumatic fever and rheumatism are more frequent than in the other parts of the district.

The alluvium is not more than from six to fifteen feet above the normal ground water level, which, however, has been artificially lowered in parts of the district by the cutting of the deeper trenches for the main sewers and by the drainage from the working of the coal. As the coal is worked the surface of the ground water level is becoming appreciably lowered. This I have ascertained from the fact that in wells which formerly overflowed, the water now stands at a depth of from two to three feet from the surface.

It is certain that a portion of the improvement in the phthisis rate, pointed out by Dr. Buchanan, is due to the pumping and drainage from the collieries, as well as to the deep drainage by the sewers. The ground water is from twelve to sixteen degrees in hardness, and is always charged with sulphates which are derived from the decomposition of the aluminiferous shales of the coal measures. In some of the abandoned levels I have found magnificent crystals of glauberite (CaNa_2SO_4) which indicates the combination in which the lime and sulphates probably exist in the ground waters.

SURFACE CONFIGURATION.—The ground rises rapidly from the S. to the N. of the district, and the valley being narrow the sides of the hills rise almost precipitously in places from the river. The ground that rises somewhat less precipitously has chiefly been used for building purposes. There are, thus, naturally provided, ample opportunities for drainage by gravitation, and it is only on the alluvial ground that any difficulty has been found in obtaining favourable levels for the sewers.

The lowest elevation above the sea level in the district is 358 feet, at the Mafon bridge at the extreme south of the district, and $9\frac{6}{8}$ miles to the N.E. of this point, at the extreme N.E. corner of the district, is the highest point, Pwll Mere, which is 1,768 feet above the sea level.

The district is in shape an irregular triangle, the N. base of which measure $5\frac{1}{3}$ miles, the western side $9\frac{2}{3}$ miles, and the eastern side $9\frac{6}{8}$ miles. The apex of the triangle is nearly due south. The greatest elevations of the high ground forming the boundaries are 1,768 feet on the N. and E., and 1,468 feet on the western side.

As the whole of the habitable portion of the district lies below the 1,200 feet level, it follows that the district, to a great extent, is fairly well sheltered, but from the varying elevations it follows that great variations of temperature are felt whilst passing from the lower to the higher parts.

WATER SUPPLY.—The water supply for the town is obtained from the river Taff at a distance from eight to ten miles from the town. The water is partly a surface water from mountain and uplands, and partly a spring water from deep springs in the mountain sides coming in many cases from peat beds.

The formation from which it is drawn is the old red sandstone. The water is pure, ample in quantity, and soft, varying between 1.75 and 4.5 degrees of hardness. It is singularly free from all kinds of organic life, and repeated bacteriological examination discloses a satisfactory absence of bacteria developing at the temperature of the blood. There are three reservoirs for storage and compensation purposes, Pentwyn having a capacity of 350,000,000 gallons, Lower Neuadd with a capacity of 75,000,000 gallons, and the New Neuadd with a capacity of 350,000,000 gallons. The first and second mentioned reservoirs have serious faults in the embankments, which are built of earth dams with a puddle trench; the last-mentioned reservoir is a magnificent structure with a masonry dam. The old Neuadd is at the present undergoing alterations and repairs, which it is hoped will be efficient in making it safe and watertight.

The water is led in iron mains from the reservoirs, and in wet weather from straining beds in the river to the filtering plant. There are two filtering stations, which are situated respectively above Dowlais and Penydarren, the Dowlais station being at the higher level. The filtering is efficiently done, and the water is delivered to the consumer in a state of great purity. There has been a great improvement in late years in the cleanliness of the premises around the filtering stations.

There are very few houses in the district that are not now supplied from the town mains. Complaints of scarcity of water are, however, continually being made from householders in the lower parts of the district. This trouble will, it is hoped, be remedied when the new aqueduct is completed. The want of pressure in the lower district is due to the diminution in size, owing to the corrosive action of the water on the iron pipes, and in particular to the peaty acids which appear to have considerable solvent action on iron. The water has a very slight solvent action on lead, but no case of lead poisoning has been traced to this cause.

The water supply is constant, and in many places is at an exceedingly high pressure. Leakages from the mains and from defective service pipes are common throughout the district. Many of the service pipes have been carelessly laid in ashes, which soon causes the lead to be eaten away by electrolytic action.

SEWERAGE.—The whole district, with the exception of a few outlying parts, is well sewered, and the sewers are in nearly all cases of sufficient capacity and fall to render them self-cleansing. In consequence the occurrence of stoppages is rare. A great many of the defective house connections are yearly being discovered by the Sanitary Inspectors, and, as may be seen from the table of “Defective drains made good” at the end of the Report an enormous amount of steady improvement is steadily going on, in this matter, 16,638 feet having been made good in 1900 without much public attention being directed to it. Most of the original connections were carelessly made, and broken pipes used with as free a hand as whole ones. The condition of some of the older house drains was insanitary from the time when they were laid down, but gradually they have come under the notice of the Inspectors, and have been righted.

The district sewage is disposed of partly by downward intermittent filtration with the most satisfactory result. Despite the fact that some critics have announced that the land is becoming “sewage sick,” I am able to report that the original high standard of the effluent is still maintained, and that the ground is as free from clogging and as sweet as it was at the commencement of operations. The remainder of the sewage is disposed of by irrigation, and this is satisfactorily done. New sewage settling tanks have been constructed at Troedyrhiw, thus avoiding the objectionable stinking tanks on the high road, which used to be a menace to the health of the residents at Troedyrhiw. Since the new tanks have been constructed the operation of “settling” is carried on without an appreciable nuisance. The total area of the downward filtration beds amounts to 20 acres, and of the wide irrigation land 400 acres.

The rateable value of the district for the October rate of 1900 amounted to £244,640 7s. 6d. The area of the district is stated to be about 17,759 acres, and the estimated population at the middle of 1900 I fix at about 77,024. The floating nature of the population is a great difficulty in making an estimate which has any pretence at accuracy.

OVERCROWDING, AND HOUSING OF THE WORKING CLASSES.—I find that overcrowding is common all over the district. The Sanitary Inspectors are continually coming across grave cases of overcrowding, and yet are unable to advise proceedings in most instances, as the persons who would be evicted have nowhere else to go to. The congested state of the district was well shown during the smallpox cases at Pant, when for over three months we had to accommodate Spanish labourers who had been in contact with the cases in outbuildings at the Pant hospital. In connection

with this matter of overcrowding, I desire most strongly to place on record that the present houses which are proposed to be built by the Council are not the class of house which is overcrowded at the present time, and that unless they can be let at from 10s. to 15s. a month they will do nothing to relieve the dangerous overcrowding of the lowclass houses. This, as anyone can ascertain for himself, is chiefly present in the low-rented and two or three-roomed hovels, or in small houses tenanted by widows who have to make a living by letting lodgings. The real need in this district is for small cottages which can be let at a rate to render the tenant independent of the taking of lodgers to help to pay the rent.

There is little demand for the better class of house such as the Council are building that cannot be met by private and speculative building. I am convinced that the housing of the working-class problem will not be solved by any other means than by improvement schemes, which will embrace the provision of new cottages of suitable size and cheapness to enable the tenants dispossessed from the hovels to be comfortably and decently housed without at the same time being burdened with a house that they cannot themselves afford; and which must therefore be paid for either by crowding with lodgers or out of the public pocket. The matter of housing this "submerged tenth" is a much more pressing necessity than the housing of the working-classes as a whole, for the greater number of the artizan class are already provided for by private enterprise, whereas the class to which I refer cannot hope to assist themselves to any extent, and are not provided for in the present scheme. It is chiefly amongst the lowest class that we get the filth diseases prevalent, and they constitute a grave menace to the public health. Unless they are specially taken in hand, I fear the operation of the Housing of the Working Classes Acts will, by closing the older hovels and forcing them to overcrowd the remaining lower class of houses, prove a direct injury to the health of the population at large.

The operation of closing insanitary houses must be proceeded with, and the tenants of these houses must find accommodation somewhere. It appears to me that it is little short of cruelty to the class to which I refer to unhouse them; and leave them the alternative of seeking accommodation as lodgers in houses which are rented so far beyond their means as to render them unattainable except they are rented in conjunction with other families, or of overcrowding the remaining poor class of houses which themselves are undergoing closure at the hands of the authorities.

No scheme that has been considered by the Council will meet this want, although deputations from the labouring class have waited on the Council and given terrible examples of the sufferings of the labouring classes. None of the examples of overcrowding brought to the notice of the Council occurred in houses tenanted by a class who could afford the proposed new houses.

Some of the large towns have by improvement schemes and the provision of lodging-houses and small tenement houses, attempted to deal with the matter with some success, and I am sure that in this district it will soon become imperative to proceed in the manner that I have indicated.

For the reasons mentioned above I have thought it better not to proceed with the actual closing of many houses which I have officially represented as unfit for human habitation, but I have endeavoured, by causing alterations and improvements to be made by the landlords and owners, and by causing proper surface and slop drainage to be provided, to place their tenants in more sanitary surroundings. At the same time I have urged the Inspectors to direct the attention of both the tenants and the landlords to the necessity of strict cleanliness in the surroundings and in the houses, and have pointed out to the landlords that it is to their advantage to insist on these recommendations being most strictly observed. It is to the interest of the landlords to have their property kept in a clean and sanitary condition, and the power they have of ejecting an undesirable tenant could be made use of as a powerful inducement to promote cleanliness.

General Sanitary Work in the District.

INSPECTION.—The sanitary inspection of the district has been most efficiently carried out during the past year, both under the period of office of your temporary Medical Officer, Dr. Jones, and during the period that I held office. The Inspectors have shown great zeal and tact in the exercise of their duties, and the recourse to legal proceedings has rarely been necessary.

A complete house to house inspection of the district has been commenced, and the results thereof are being kept in properly-arranged books, so that as the work proceeds a complete sanitary index of the needs of the district will be obtained.

From the Inspector's Report an idea will be gathered of the magnitude of the work of the Health Department. The year has been marked by the outbreak of enteric fever, which furnished material for a special report. In this Report I mentioned and laid

stress on the facts that since it has been proved that the typhoid organism could be found in infected soil, and was an organism that had an independent life history without the body, and could multiply under favourable circumstances of temperature and under suitable materials for its growth, it was evident that there must be means by which the organism is carried from its breeding grounds to the mouths and to the food of those persons who become infected.

It is well known that the strict cleanliness in matters of food and of person that is enforced in a modern isolation hospital is the means of protecting the nurses and attendants on the sick from acquiring the disease. I also laid stress on the fact that the *rôle* that insect life played in the distribution of the disease had been greatly overlooked. Immediately following the appearance of my report the subject received some attention in the Medical journals, and it was pointed out by Mr. Treves, that in South Africa the flies would crowd over the enteric cases in a most marked manner. It was also suggested that the dust storms and the flies carried infective material from the open latrines to the food of the soldiers.

Before my Report appeared an enquiry had taken place under State direction into the causes of the outbreak of enteric amongst the American troops in the Spanish-American war. The conclusions of the Commissioners were that the outbreak was not due to infection of water or of milk, as civilians using the same supplies of the above articles as the troops used had escaped infection. It was carried by certain regiments with them from one camp to another. It was not prevalent in those regiments who had wire gauze fly-proof cages for the food supplies, or in regiments whose food supply was kept at a distance from the open latrines. The infection could be carried by clothing. For the above information I am indebted to Dr. Woodbridge, one of the U.S. Army Brigade Surgeon-Majors. It is evident that this subject is now attracting more attention in the Medical world, and I am convinced it will be found one of the most common means of the spread of infection.

The number of cases of infectious disease in the separate Wards of the district will be found in the table at the end of the Report.

The enteric cases recur again and again in the same districts. They are, to my mind, due to infection of the soil, and in proof thereof I was able from the Caedraw district to secure a specimen of soil from which I separated a typical cultivation of the Eberth Bacillus. This special culture I used for testing specimens of blood taken from suspected typhoid cases, and it gave the so-called

Widal reaction perfectly; this test, together with its morphological characters and its peculiarities on various culture media, rendered it possible to complete its identity with the bacillus of enteric fever (Eberth's Bacillus or B. Typhosus). The soil was a scraping from a slightly defective house gutter, which allowed a small pool of water to remain continually in the joint between two pieces of channelling stone.

Your late Medical Officer continually laid stress upon the connection which defective slop drainage bore to the spread of typhoid. I am convinced that he was right both in this conclusion and in the conclusion that the habit of disposing of slop water on the road was also a fruitful cause of disease.

With regard to the slop water nuisance, I strongly recommend that in your new bye-laws you should introduce a special clause prohibiting this disgusting practice. It appears that it cannot be prevented by the present bye-laws, and that the Public Health Acts and the Towns Police Clauses Act do not specially refer to it, the probability being that the framers did not consider that such a disgusting habit was possible in the latter part of the century.

DISINFECTION.—The erection of a steam disinfector of a modern type has rendered it possible to now carry out an efficient disinfection of clothing and bedding. This is a great boon, as the old apparatus, which has been in use for so many years, has been found to be insufficient for the purposes for which it was designed. It was no uncommon occurrence for the Sanitary Inspectors to be told that even the vermin in the "disinfected" clothing was not killed by the process.

SCAVENGING.—The scavenging in the district is on the whole well done, but isolated instances of neglect on the part of the contractor's men are from time to time reported on and brought to the notice of the Surveyor's Department by the Inspectors and by the Ward Representatives.

INFECTIOUS DISEASE HOSPITALS.—The number of admissions to the Brecon-road Hospital during the past year amounted to 89. Of these, 78 were discharged well, and 11 died. The number of patients admitted to the Pant Hospital numbered 82, of which 11 died and 71 were discharged well. In addition to these there were 16 Spaniards isolated in connection with the small-pox cases, and two interpreters. One of the interpreters contracted small-pox in a mild form, having been vaccinated on being brought into contact with the disease. All the suspects who had not been recently re-vaccinated were immediately vaccinated. The result was that, although they were in almost direct contact with the infected case, not one of them acquired the disease. The only accommodation that the Hospital afforded was that they

should be under the same roof, and in the same room as the infected case at night, the ward in which they slept being separated merely by a dwarf partition from the ward occupied by the patient.

At Pant Hospital I had under my care at the same time small-pox and diphtheria, and a case of whooping cough, under the same roof, and the enteric cases in the other ward close to the small-pox ward. It is a matter of pure good luck that the enteric patients escaped the small-pox infection. As the Brecon-road Hospital was full at the time no other arrangement was possible. I have also had to nurse diphtheria, scarlet fever, and erysipelas under the same roof without an air break between the wards, which is also a risky undertaking. I may, to complete the picture, add that the Nursing Staff have to sleep under the same roof as their patients, and thus spend the whole of their time in an infected atmosphere, the result being that one nurse had mild enteric, and several had to return home in ill-health.

The necessity for building a good central Hospital for infectious diseases has again and again been urged on you, and I trust that it may speedily be pushed forward, as it is one of the most urgent necessities of the district.

There is absolutely no equipment in the way of instruments, and few nursing appliances, at either of your Hospitals. These should be immediately supplied, as they are absolutely essential for the proper attendance on the sick. I lent the necessary articles during last year, but this was not a part of my undertaking with the Council.

The details of the cases admitted, and the results of treatment, will be found in the appended table, and the total number of days' residence of patients in the Hospitals, and the average number of days' detention per patient.

TABLE A.

ADMISSIONS TO THE FEVER HOSPITALS.

Disease	Number of Cases		Discharged Well		Died
Typhoid Fever ...	138	...	118	...	20
Erysipelas ...	12	...	12	...	0
Puerperal Fever ...	1	...	0	...	1
Diphtheria ...	10	...	10	...	0
Scarlet Fever ...	8	...	8	...	0
Small-pox ...	2	...	1	...	1
	<hr/> 171	...	<hr/> 149	...	<hr/> 22

Number of days in residence of above patients, 4648.

Average duration of detention in Hospital per patient, 27·2.

In addition to the above sixteen persons were isolated on account of the small-pox case, having been in contact with the sick person.

The case of small-pox which was fatal was not vaccinated, and was confluent. The case of small-pox which recovered was successfully re-vaccinated and was extremely mild.

REFUSE DISPOSAL.—The scavenging refuse is still disposed of by tipping on waste land. This occasions many complaints from residents in the near neighbourhood of the refuse tips. I have noticed a tendency to increased liability to enteric fever in these localities. I have no means of stating definitely whether this is by reason of the proximity to the refuse tips, but since the refuse from infected houses must continually be carried to the tips, it is not improbable that this may have something to do with the disposition to increased prevalence of the disease in these localities. The modern system of cremation of the town refuse is the safest, and has been strongly urged upon you by Dr. Jones, your late deputy and temporary medical officer. I cannot too strongly commend his views to your consideration.

INSPECTION OF SLAUGHTER HOUSES AND MEAT.—The inspection of slaughter-houses has been efficiently carried on. Many improvements have been suggested to the owners and occupiers, and on the whole there is a disposition to improve the condition of these establishments.

The meat inspection is not as efficiently done as is desirable, but your inspectors have not the time, and have not the necessary technical knowledge to do this work properly. It is a duty which should be entrusted to a person who has the necessary veterinary knowledge, and who is conversant with the minute appearances of disease in animals. The appearances of disease are not always sufficiently marked to enable a person without knowledge and experience to decide what is fit for food and what is unfit.

The establishment of a central abbatoir would render this work more easy, and if the abbatoir were superintended by a skilled inspector the public would gain thereby. Schemes have been considered by the Council for the establishment of district abbatoirs, but as yet little progress has been made in the matter.

INSPECTION OF DAIRIES.—A laborious investigation into the condition of the cowsheds and dairies was instituted by your temporary Medical Officer, and continued under my supervision. The work was practically complete before I was appointed, and was most carefully and minutely done.

This matter is still receiving the attention of the Council, and arrangements have been completed for the adoption of the new regulations, and for the appointment of inspectors. The many defective cowsheds and the dairies and the milk-sellers will in future be able to be kept under supervision, and much good may be expected as a result.

INSPECTION OF ARTICLES OF FOOD AND DRINK (FOOD AND DRUGS ACT).—These duties are entrusted to the police, they therefore do not come under your control. In November last I was consulted by a man who presented the typical appearances of a person suffering from arsenical neuritis. On making enquiries I found he had been engaged at a local brewery. On continuing my enquiries, I found that other men engaged at the brewery had suffered in a similar manner. I was led to conclude that the brewery was using glucose which was contaminated with arsenic. The police took samples of the beers throughout the district, and the beer from the suspected brewery was found to contain $\frac{1}{6}$ gr. arsenic (metallic) per gallon. A prosecution was instituted by the police, and a fine of £5 and costs was inflicted on the retailer. In other towns I notice that the brewers have been proceeded against in similar cases where the beer was sold from a “tied house,” and I think this would have been a better course to have adopted in this instance if it were possible, as the responsible persons appear to get let off and the agent who sells the beer, and who is not responsible for its purity, suffers.

Vital Statistics.

POPULATION.

I estimate the population at the middle of the year 1900 to be 77,024. This estimate is made after a careful consideration of the basis on which the estimate was made for 1899, which I consider to be on the whole a very carefully devised basis. As stated by Dr. Jones, the estimate is at the best a guess, but I believe it will not be found to be very far below the actual population. The figures give a birth-rate that is proportional to the past records of the district.

BIRTHS.

The Births in the Upper Registration District for 1900							
amount to	...	...	...	...	...	...	1253
And in the Lower District to	...	...	...	...	...	...	1405
<hr/>							
Giving a total of	...	...	...	...	...	...	2658
Total for 1899	..	...	...	...	...	...	2357
<hr/>							
Increase							301

These figures are equal to a birth-rate of 34.5 per 1,000 of the estimated population.

DEATHS.

The Deaths in the Upper Registration District amount to...	724
And in the Lower Registration District to	904
<hr/>	
Giving a total of	1628
Total for 1899	1690
<hr/>	
Decrease	62

These figures are equal to a death-rate of 21·1 per 1,000 of the estimated population.

MARRIAGES.

The marriages at the various Denominational Churches and at the Registry Offices in 1900 amounted to	713
And at Established Churches	194
<hr/>	
Giving a total of	907
Total for 1899	651
<hr/>	
Increase	256

INFANT MORTALITY.—You will notice that in table three particulars are given of the deaths of 483 children under one year of age, and 248 children under five years of age, making a total 731 deaths. This is nearly equal to half of the total deaths at all ages in the district during the year.

On examining the table it will be found that 148 of these deaths were due to the specific Febrile class of Diseases, 83 from Constitutional Diseases, 103 to Developmental Diseases, and 251 Local Diseases. Measles and Whooping Cough (Pertussis)—two of the Infectious Diseases which are not included in the Notification Act, but which you have power to include in the Act—account for more deaths than the whole of the rest Infectious Diseases taken together. Nothing is done to check them until the Disease gets so bad that such a number of children are absent from school suffering from the Disease that the School is closed. Were the Epidemic to break out among the adult population to the same extent a state of panic would soon be reached, and every step possible would be taken to stamp the Disease out. At present it is allowed to exhaust itself.

The Deaths from Marasmus (48), Disorders of Digestion (97), and many of the deaths due to Convulsions (72) are due to

the ignorance displayed by mothers in these parts in feeding their children. Bottle feeding is now bidding fair to become universal. Young mothers will not take the trouble to nurse their children, and year by year as the bottle feeding gains, so will the infantile death rate increase. There is a field that the Council might do good work in if they provided the parents of newly born children with instructions how to feed their children. The modern child has a hard struggle from the very moment of birth, and it is most extraordinary that in this age of progress the most important knowledge of how to feed the young seems to be universally neglected with disastrous results. If the Council were to place in every young mother's hands the information that no child should be given solid food until nine months old without the permission of a medical man, and if they could be pointed out the risks of overfeeding, which is as fatal as starvation, if they could be persuaded that the "bottle" is a bad makeshift for breast nursing, and that if the "bottle" has to be adopted the less rubber about it the better, then I am sure the deaths amongst infants would decrease most markedly. At the present time it is only the strongest of the children who survive, and the more a child wastes from overfeeding, or from being fed on indigestible tinned food and biscuits in the place of milk, the more the ignorant "neighbours" ply the poor little mortal with all kinds of nostrums and rubbish in the shape of "Patent Foods" which the infantile stomach was never constructed to digest.

The deaths from Respiratory Diseases amongst the young you will find to be enormous, 165 children under five years having succumbed from disease of the breathing apparatus. This number is largely due to the insufficient clothing that it is the custom to provide for children. Bare legs and the abdomen only partly covered is the condition of nearly all children between these ages. Children require warmer and more careful clothing about these parts than adults do, but the fashions of the times and the ignorance of the mothers lead to the opposite condition being adopted. I have many times spoken to mothers both on this question and on the question of proper feeding, with the result that a temporary improvement has taken place, but I have too often found that the good has been undone by an "experienced neighbour" who "has had ten children or more, and who has buried eight of them." If your Council intend to move with the times, and enquire what can be done to prevent the slaughter of the innocents that goes on year by year, it is this "experienced neighbour" who will be the stumbling block.

YEAR 1900.

Wards.	Occupied Houses.	New Houses	Closed or Demolished.	Estimated Popu- lation 1900.
Dowlais	2,589	32	5	14,239
Penydarren	3,119	55	6	16,374
Town	2,710	34	2	14,227
Cyfarthfa	1,965	21	18	10,807
Plymouth	1,523	74	0	8,377
Merthyr Vale	2,250	106	0	13,000
	14,156	322	31	77,024

INFECTIOUS CASES NOTIFIED DURING THE YEAR 1900.

Wards	Typhoid Fever	Continued Fever	Scarlet Fever	Puerperal Fever	Diphtheria	Membranous Group	Erysipelas	Smallpox	Total
Dowlais	47	—	39	3	18	—	18	2	127
Penydarren	40	—	12	1	13	—	12	—	78
Town	54	—	47	3	54	1	31	—	190
Cyfarthfa	55	1	56	3	32	—	16	—	163
Plymouth	36	—	34	3	41	5	2	—	121
Merthyr Vale	42	—	6	—	22	—	9	—	79
Union	4	—	—	—	—	—	4	—	8
	278	1	194	13	180	6	92	2	766

HOUSES UNFIT, &c., YEAR 1900.

Number of houses represented as unfit, &c.	...	...	...	...	100
Number of houses rendered fit	...	...	...	...	19
" " closed	...	...	...	...	15
" " demolished	...	...	...	...	16
Proceedings	...	...	...	...	50
Total	...	...	...	...	100

Wards	Closed	Demolished	Rendered fit	Proceedings	Total
Dowlais	4	2	14	25	45
Penydarren	2	4	—	10	16
Town	1	—	1	15	17
Cyfarthfa	8	10	4	—	22
Plymouth	—	—	—	—	—
Merthyr Vale	—	—	—	—	—
	15	16	19	50	100

Sanitary Condition of Each District.

DOWLAIS WARD

Consists of that part of the said parish which is comprised within a line commencing at the Morlais Brook, where it is crossed by the Parish Road over Caeracca Bridge, from Dowlais to Pant, and following the Pant Road northward to the bend at Penrhiwcamran, then direct north to the River Taff Fechan, up that river as far as Cerrig Mawr, where it strikes the boundary of the County of Brecon, and along the boundary of the parish to Pwllmorlais, thence to Llwh Fawr, where it strikes the boundary between Merthyr and Gelligaer Parishes, and along that boundary till it strikes the boundary of the Forest Hamlet, thence following that boundary until it strikes the boundary of Penlan Farm, thence northward along the boundary of that enclosed land and the Common to the north-east point of Coedcae Clynmil, thence in a straight course to Pwlllywhiaid Gate, and following the boundary between Penydarren and Pwlllywhiaid Farms to Dowlais Brook, under the Dowlais Lower Works, up that brook till it reaches a point due south of the point where the centre of George Street falls into the centre of High Street, Dowlais, thence in a straight course from Dowlais Brook to George Street, along Brynzion Street and Walter Street, and thence along the footway leading from that street to Cwmrhydybedd until it crosses the Craig Brook, down that brook to its confluence with the Morlais Brook, and thence north-eastward along the Morlais Brook to Caeracca Bridge first mentioned.

Elevation above the sea level at Gellifaelog, 800 feet; at Pwll Mere 1,768 feet. Population, 14,239. General Death Rate, 27·8. Zymotic Death Rate, 3·5.

In this Ward an immense amount of sanitary progress has to be made before it can be said to be in a healthy condition. It is overcrowded, and contains many dwellings of a very inferior type. The air space about most of the older buildings is very insufficient, and it contains rows of houses which are rapidly becoming very unhealthy, and which abound in structural defects. If a couple of the worst areas in this Ward were made the subjects of improvement schemes a great deal of this could be remedied.

In George Street, South Street, and in Brecon Street are bad types of houses, which will require close attention from the Council. In addition, I must add that at Dowlais Top, Caeharris, East Street, Sand Street, and in many other streets are houses of an insanitary nature. Many improvements have been carried out in this district, and I trust that the appointment of an Inspector for this district will have a marked effect on its sanitary condition. Improvement must be slow when it is effected piecemeal, but it is encouraging to find how ready the houseowners are in most instances to adopt the recommendation of the officials of the Council.

PENYDARREN WARD

Consists of that part of the said parish of Merthyr Tydfil which is comprised within a line commencing at a point within the centre of High Street, Dowlais, opposite George Street, and proceeding along George Street, Brynzion Street, and Walter Street, thence along a footpath leading from that street to Cwmrhydybedd, until it crosses the Craig Brook, and down that brook to its confluence with the Morlais Brook, thence up the Morlais Brook to Caeracca Bridge, and following the Pant Road northward to the bend at Penrhiwcamran, then direct to the River Taff Fechan, and following the course of that river to Cefn Bridge, thence along the Brecon Road to the point where it is joined by Bethesda Street, thence in a straight course due south to Morlais Brook, and up that brook until it strikes the boundary of the Penydarren Estate, thence along the south boundary of that estate till it reaches a point at the extreme southern corner of a close on the Penydarren Estate, No. 2024 on the Tithe Commutation Map, and from such point due south straight to Penheolferthyr Gate on the parish road from Twynyrodyn to Pwlllywhiaid, thence eastward along the boundary between the enclosed land and the Common to the north-east point of Coedcae Clynmil, thence northward in a straight course to Pwlllywhiaid Gate, and along the boundary between the Penydarren and Pwlllywhiaid Farms to the Dowlais Brook, under Dowlais Lower Works, thence up that brook till it reaches a point due south to the point first-mentioned, and thence northward to such first-mentioned point.

This Ward lies at from 600 to 900 feet above the sea level. I estimate its population at 16,374. It is a fast improving Ward, and contains some of the most healthy houses in the district. Its General Death Rate is 10.0, and its Zymotic Death Rate is 1.2. It contains many new-built houses, and has a few bad spots to disgrace it. Company Row, Tai Arches, Tramroadside, and Bradley Row all require the closest attention. Harris Court has been effectively repaired. Tai-yr-Efail will require representing as unfit unless the miserable condition of the houses be improved.

TOWN WARD

Consists of all that part of the said parish of Merthyr Tydfil which is comprised within a line commencing at Pontmorlais Bridge, and proceeding up the Morlais Brook to the boundary of the Penydarren Estate, thence along the south boundary of that estate to a point at the extreme south-end corner of a close on the Penydarren Estate, shown as No. 2024 on the Tithe Commutation Map, and from such point due south straight to Penheolferthyr Gate on the Parish Road from Twynyrodyn to Pwlllywhiaid, thence along that road southward to a point where it is crossed by the Dowlais Railway Incline, and along the centre of such incline to the Taff Vale Railway, thence in a straight course to the River Taff, and up that river to confluence with the Morlais Brook, and thence up that brook to the Pontmorlais Bridge.

This Ward is of a very varying character in its different parts. It varies in elevation from 425 feet at its lower portion to 1480 at Twynywain. The estimated population I place at 14,227, the General Death Rate at 31.7, and the Zymotic Death Rate at 4.7. It contains some of the best houses in the district, and some of the very worst, I believe, in South Wales. It is steadily being improved, even if the improvement be slow. Pedwranfach and the Ball Court district ought without doubt to be made the subject of an improvement scheme, and the entrance to the town would be improved and the "throttle valve" removed at the same time. I believe that a scheme for improving this district would yield a substantial revenue to the district at large if it were effectively carried out.

Tramroadside North is an insanitary area. All the courts in this locality will have to be dealt with, as they are all in a miserable condition, and the open slop gutter is still a menace to the inhabitants of the locality. Pottery Row is a collection of miserable dwellings, and Lamb Lane is still dirty. Caedraw is slowly improving, but the house accommodation there does not commend itself to a sanitary official. Bridge Street and some of Garden Street will have to come under your special notice. There are courts at the backs of Wellington Street and Albert Street which will have to be improved before the district can be approved of. The whole district is, however, improving. The Town Ward wants as much improvement as the Dowlais Ward does.

CYFARTHFA WARD

Consists of all that part of the said Parish of Merthyr Tydfil which is comprised within a line commencing at Cefn Bridge and following the Brecon Road southward to the point where it is joined by Bethesda Street, thence due south to the Morlais Brook, and down that brook to the River Taff, thence following the course

of the river to a point opposite the Taff Vale Dowlais Branch, thence to the Canal, along a line produced by the extension of the Dowlais Incline, and along the centre of the Canal until it strikes the boundary of the Taff and Cynon Hamlet, thence along that boundary westward to the parish boundary between Merthyr and Aberdare, and along the parish boundary northward and westward to Cefn Bridge.

The Ward lies at an elevation of from 400 to 1,300 feet above the sea level. I estimate its population at 10,807, its Death Rate 9·0, and its Zymotic Death Rate at 1·5. It has several excessively dirty courts and alleys. Morgan Town is improved. Caepantwyll cannot be properly dealt with except by an improvement scheme; it is still a hotbed of fever. Quarry Row and Back of Charles are to be greatly improved, and a sore spot will be healed in this district.

A continual nuisance is the heap of manure deposited on the vacant land opposite the Jackson's Bridge. I have reported it several times with only temporary improvement. The skin factory has been reported to me on several occasions; it is a source of considerable nuisance at times. The brook at the back of Aberdare Road I called your attention to, but nothing has been done in this neighbourhood despite the virulent outbreak of enteric fever. The pitched gutter should be replaced with proper channelling, the brook covered over, or the houses represented as unfit owing to the defective sanitary conditions in which they are situated. Had I remained your officer I intended to deal with them in the last-mentioned manner.

PLYMOUTH WARD

Consists of all that part of the said Parish of Merthyr Tydfil which is comprised within a line commencing at a point in the River Taff reached by the extension westward of the Dowlais Branch of the Taff Vale Railway, and proceeding from such point westward to the canal, thence southward along the centre of the canal till it strikes the boundary of the Hamlet of Taff and Cynon, and westward along that boundary to the parish boundary between Merthyr and Aberdare, thence along the parish boundary southward, eastward, and northward till it strikes the northern boundary of the Hamlet of Forest, thence following that boundary until it strikes the boundary of Penlan Farm, and northward along the boundary between the enclosed land and the Common till it reaches the parish road at Penheolferthyr Gate, thence westward along that road till it reaches the Dowlais Railway Incline, and along the centre of such incline to the point first mentioned, comprising the lower part of Merthyr, south of Mardy Bridge, and including Pentrebach, Abercanaid, and Troedyrhiw.

Has an elevation of about 400 feet above sea level. Population estimated at 8,377. Death Rate at 19.3. Zymotic Death Rate at 4.0. I made a special house to house inspection of the greater part of this district, more particularly of the worst parts. Many defects were pointed out to the house-owners, and after considerable trouble some of the defects were made good. I reported several parts of this district as being without closet accommodation, some without proper water supply, and many grave sanitary defects. In the matter of the prime sanitary necessities of water and sewerage, it is the most backward Ward of the whole district.

I gave special instructions to the Sanitary Inspector for this Ward to report on these matters, and from time to time they have been brought to your notice. I trust in the future to see that some of the work that I was responsible for in this district will bear fruit, and that it may from the most neglected Ward become one of the best cared for. I had to deal with a "milk epidemic" of enteric fever in this Ward, which speedily ceased on the necessary steps being taken. The epidemic was causing great alarm in Abercanaid; it seemed to pass from house to house unchecked until its cause was discovered.

MERTHYR VALE WARD.

All that portion of the Parish of Merthyr Tydfil lying outside the Parliamentary boundary, including Merthyr Vale and Treharris, and that portion of Llanfabon Parish recently transferred to the Parish of Merthyr Tydfil, namely, from Pontsquire on the east following the Llancaich Brook in a south-easterly direction about 250 yards, and then in a south-westerly direction between Tyllwyd and Old Berthllwyd, thence continuing in the same direction for a distance of half-a-mile beyond the Mafon Brook, and thence in a northerly direction to the River Taff, where it joins the old boundary of the Merthyr Parish at Rhydygrugllwyd, and following that boundary to the point first-mentioned.

Elevation from 258 to 300 feet. Population estimated at 13,000. General Death Rate 16.7. Zymotic Death Rate 2.5. A comparatively modern Ward, which requires a great deal of attention to keep in order. Typhoid endemic at Crescent, Merthyr Vale, and Taff Street, and the disease of a virulent type. Patients removed from this district give grave anxiety to the staff of your fever hospitals. I think it is partly due to the length of the journey, as well as to the violence of the attack of fever, that they have done so badly as compared with patients from other Wards. A branch fever hospital at Merthyr Vale would be a boon to the Ward, and I think it would be usually occupied. The divided responsibility with regard to the roads and footpaths and pavements in the lower Wards is a disadvantage to them. A central

road authority for the whole district is one of its sanitary necessities. The water supply to this lower district is insufficient. This will be remedied, I trust, by the new aqueduct.

General Remarks on the Necessities of the District.

It will be noted that two of the most fatal infectious diseases are not notifiable under the Notification Act. I refer to measles and whooping cough. The only information that the sanitary department get as to the prevalence of these diseases has been obtained in the past by the fact that the Medical Officer of Health has been able to note their prevalence from the information gained from his private practice or from the weekly returns of fatal cases. These two diseases should be included as notifiable under the compulsory powers of the Act. They cause more deaths than scarlet fever, or even than diphtheria and enteric. At present the children who have cases of measles at home can be found in the schools disseminating the diseases from the authorities lacking early information of the outbreak of the disease. I believe the school authorities try and prevent children from an infected house attending school, but in most cases they do not get the information.

The administration of the Food and Drugs Acts would be more properly entrusted to the Council than to the police. At the present, if the Medical Officer or Inspectors suspect the purity of an article, the County Analyst claims a fee of £1 1s. for his examination of it. This is another disadvantage of a dual control, as the officials of your Council are unwilling to incur this expense on their own authority, and by the time the requisite authorisation is obtained the suspected article would in all probability be disposed of.

It seems reasonable that the powers entrusted to the Inspectors and Officers of the Council should be fortified with the power to get the necessary analyses done at the lower rate of charges.

The closer supervision of the meat supply by a qualified Veterinary Inspector, who should also have the examination of cattle in dairies, is very desirable, and would be of the utmost value in combating the spread of tuberculosis by diseased milk and diseased meat. It is only after the appointment of such an officer that the necessity of such an appointment comes home to the ratepayers on reading of the seizures made by that official.

I have emphasised the necessity for better hospital accommodation, and this matter, I trust, will be dealt with by my successor. The Health Department must, with the advance of

knowledge, and with the increasing work that falls to the department, become more of a spending department, and the money requisite should not be grudged.

Although there may not be much apparent good at the moment, the good will become more and more apparent in the course of time, and better housing, purer food, perfect drainage, pure water, and above all close and careful inspection with its influence upon the modes of life of the classes amongst whom sanitation is at present little understood, will give us healthy children, freedom from filth diseases, prolonged life, and other benefits that accrue from better living.

The passing generation undertook to provide for us pure water, good drainage, and good systems for disposal of sewage. Let us follow up the good work inaugurated by them, and give the teeming population of this valley good houses, good food, and an efficient and cleanly method of the disposal of house refuse. Hardly can we expect the poor to understand the proper means of disposing of house refuse, when the Council tips accumulations of filth and garbage under the very noses of the inhabitants of some unfortunate districts !

In conclusion, I may add that in relinquishing my official position I shall not lose my interest in the well-being of the town. I hope and trust I may still find a sphere in which I can assist in the work that I have much at heart, and I will render to my successor every assistance in my power to make his work easy and pleasant.

I am, Gentlemen,

Yours obediently,

C. E. G. SIMONS.

RAINFALL.

Surveyor's Report.

To the Merthyr Tydfil Urban District Council.

GENTLEMEN,—I beg leave to submit the following Table showing the recorded rainfall in 1900 at your Pentwyn and Neuadd Reservoirs, and in the Taff Fechan Valley north of the same:—

PENTWYN RESERVOIR.

Gauge · 1,120 feet above sea level.

Month.	Total depth in inches.	Greatest fall in 24 hours. Depth.	Date.	No. of days on which ·01 or more fell.
January ...	7·44	1·04	6th	29
February ...	8·68	2·27	15th	21
March ...	1·76	·56	18th	10
April ...	3·13	·60	11th	17
May ...	4·26	·95	21st	14
June ...	4·66	·66	22nd	18
July ...	2·34	·79	31st	14
August ...	5·94	1·06	2nd	16
September ...	2·96	·94	26th	12
October ...	9·05	1·63	4th	21
November ...	7·30	1·42	15th	24
December ...	12·57	1·84	30th	25
Total ...	70·09			221

NEUADD RESERVOIR.

Gauge: 1,462 feet above sea level.

Month.	Total depth in inches.	Greatest fall in 24 hours. Depth.	Date.	No. of days on which ·01 or more fell.
January ...	8·41	1·13	19th	24
February ...	6·83	1·27	15th	20
March ...	1·31	·28	18th	9
April ...	3·51	·67	3rd	17
May ...	4·59	1·05	21st	12
June ...	5·11	·72	24th	16
July ...	3·80	1·00	12th	12
August ...	7·14	1·32	2nd	16
September ...	3·61	1·00	26th	11
October ...	9·90	1·40	4th	22
November ...	7·44	1·35	28th	24
December ...	14·08	1·96	27th	25
Total ...	75·73			208

ADDITIONAL RAIN GAUGES

At various selected sites north of Lower Neuadd Reservoir.

	No. 2	No. 3	No. 4	No. 5	No. 6	No. 7	No. 8	No. 9
	West of river.	East of river.	North-east of old No. 1 gauge	Near river.	Near river at foot of Beacons.	West of river.	Near river	East of river.
Height in feet above sea level	1993	1843	1486	1515	2099	2016	1723	1996
January	8·80	6·71	9·26	9·49	9·00	7·43	8·91	6·05
February	8·58	6·45	7·99	9·80	10·97	10·80	10·50	7·33
March	1·15	2·00	1·87	2·03	1·53	1·81	1·60	1·55
April	4·45	2·30	3·91	1·42	4·84	3·71	4·22	2·40
May	5·95	4·28	5·26	6·47	6·75	6·09	6·13	4·25
June	7·15	4·13	5·85	7·12	7·75	7·21	7·41	4·62
July	3·35	3·00	4·12	3·41	3·51	3·10	3·09	2·43
August	7·71	6·72	8·01	8·37	9·45	8·96	9·17	7·10
September	5·00	2·70	4·43	4·52	5·95	5·29	5·91	5·38
October	9·86	8·20	10·99	11·47	10·92	10·55	5·91	10·75
November	7·75	6·10	8·14	7·89	8·00	8·13	8·21	6·48
December	14·87	10·13	16·13	17·71	19·71	15·97	17·12	10·82
Totals	84·62	62·72	85·96	89·70	98·38	89·05	88·18	69·16

There are nine other daily gauges near the old Neuadd reservoir, situated in a line running in a north-easterly direction, where the minimum and maximum recorded rainfall is 68·19 and 84·05. The lowest reading for the year is 62·72 for No. 3 gauge, and the highest is 98·38 for No. 6 gauge, being 57 per cent. more at No. 6 than at No. 3. The heaviest rainfall recorded in 24 hours was 2·45 inches on the 27th of December.

I am, Gentlemen, your obedient Servant,

THOMAS FLETCHER HARVEY,

Engineer and Surveyor.

TABLE I.

Showing the Population, Inhabited Houses, Marriages, Births and Deaths
from 1866 to 1895 and succeeding years and in 1900

MEANS OF 5 YEARS.	Estimated Population.	No. of Inhabited Houses.	Marriages.	Registered Births.	CORRECTED NUMBER OF DEATHS.			Deaths in Public Institu- tions.
					Total all Ages.	Under One Year.	Under Five Years.	
1866 to 1870 }	52,352	10,328	630	2034	1288	340	229	53
1871 to 1875 }	52,590	10,575	648	2088	1422	345	299	60
1876 to 1880 }	50,400	9,815	545	1682	1108	242	185	45
1881 to 1885 }	50,573	10,304	684	1777	1255	279	225	55
1886 to 1890 }	56,927	10,972	645	1964	1347	360	222	81
1891 to 1895 }	63,515	11,671	654	2377	1576	516	235	108
Mean of 20 years.	55,354	10,690	632	1950	1321	349	217	72
1896	68,437	12,454	616	2344	1375	507	189	103
1897	70,811	12,767	927	2471	1698	530	308	108
1898	71,903	12,912	705	2495	1409	498	182	119
1899	73,557	13,741	657	2357	1690	640	222	160
1900	77,024	14,156	907	2658	1624	483	248	131

TABLE 1A.

CENSUS RETURN FOR MERTHYR TYDFIL, 1891.

WARDS.	Separate Families	Occup'd Houses	Vacant	Males	Females	TOTAL
TOWN	2,079	2,073	115	5,238	5,182	10,420
DOWLAIS	2,342	2,342	66	6,627	5,569	12,196
PENYDARREN ...	2,090	2,073	43	5,470	4,895	10,365
CYFARTHFA ...	1,824	1,826	112	4,448	4,274	8,722
PLYMOUTH ...	1,548	1,538	15	4,258	3,748	8,006
MERTHYR VALE...	1,384	1,258	15	4,847	3,524	8,371
TOTALS	11,267	11,092	366	30,888	27,192	58,080

No. of Occupiers per House—Upper District ... 5.04.
 „ „ „ Lower District ... 5.4.

POPULATION OF PARISH OF MERTHYR TYDFIL.

	Number.	Increase.	Decrease.
CENSUS, 1801	7,705	—	
„ 1811	11,104	3,399	
„ 1821	17,404	6,300	
„ 1831	22,083	4,679	
„ 1841	37,264	15,181	
„ 1851	46,692	9,428	
„ 1861	50,461	3,769	
„ 1871	51,891	1,430	
„ 1881	48,857	—	3,034
„ 1891	58,080	9,103	

TABLE II.

Shewing the Annual Death Rates, Death Rates of Children, and Proportion of Deaths in Public Institutions per 1,000 Deaths for the years 1866 to 1895, and for 1896, 1897, 1898, 1899, and 1900.

YEARS.	Birth Rate per 1,000 of the Population.	Death Rate per 1,000 of the Population.	Deaths of Children under 1 year, per 1,000 of Registered Births.	Deaths of Children under 1 year, per 1,000 of Total Deaths.	Deaths of Children under 5 years, per 1,000 of Total Deaths.	Deaths in Public Institu- tions, per 1,000 of Total Deaths.
1866—1870	38.7	24.5	169	259	439	41
1871—1875	39.3	26.8	165	240	445	41
1876—1880	33.3	21.9	124	220	417	40
1881—1885	35.0	24.7	158	223	404	44
1886—1890	34.0	23.6	183	266	428	60
1891—1895	37.3	25.1	199	434	417	69
Mean of 20 years	34.9	23.9	166	285	416	53
1896	34.1	20.0	217	325	513	50
1897	34.8	22.0	214	300	517	108
1898	34.7	19.5	199	353	481	84
1899	32.0	23.6	271	378	510	94
1900	34.5	21.1	183	296	450	81
Mean of 5 years	34.0	21.2	217	328	494	93

DISEASES.	AGES AT DEATH.											TOTALS.
	Age not stated.	0 to 1	1 to 5	5 to 15	15 to 25	25 to 35	35 to 45	45 to 55	55 to 65	65 to 75	75 to 85		85 and upwards.
I.—ZYMOTIC DISEASES.												
I. MIASMATIC.												
Small-pox	0	11	0	0	0	0	0	0	0	0	0	1
Measles	0	5	43	4	0	0	1	0	0	0	0	63
Rubella Rotheln	0	0	0	0	0	0	0	0	0	0	0	0
Scarlet Fever	0	0	2	0	1	0	0	0	0	0	0	3
Diphtheria	1	4	26	8	0	0	0	0	0	0	0	39
Membranous Croup	0	0	2	0	0	0	0	0	0	0	0	2
Pertussis	0	11	18	0	0	0	0	0	0	0	0	29
Influenza	0	1	0	1	4	0	0	3	3	5	1	18
Enteric Fever	0	0	2	11	13	9	4	2	1	0	0	42
Continued Fever	0	0	0	0	0	0	0	0	0	0	0	0
Typhus Fever	0	0	0	0	0	0	0	0	0	0	0	0
2. DIARRHŒAL.												
Diarrhoea	0	16	2	1	0	0	0	1	1	3	1	25
Dysentery	0	0	0	0	0	0	0	0	0	0	0	0
3. MALARIAL												
4. ZOOGENOUS.												
5. VENEREAL												
Syphilis	0	5	0	0	0	0	0	1	0	0	0	6
Gonorrhœa	0	0	0	0	0	0	1	0	0	0	0	1

DISEASES.	AGES AT DEATH.										TOTALS.		
	Age not stated.	0 to 1	1 to 5	5 to 15	15 to 25	25 to 35	35 to 45	45 to 55	55 to 65	65 to 75		75 to 85	85 and upwards.
VI.—LOCAL DISEASES.													
NERVOUS.													
Inflammation of Brain and Meninges ...	0	8	14	7	4	2	0	2	0	1	0	0	38
Apoplexy and Paralysis ...	0	0	0	0	0	2	7	7	17	17	2	0	52
Bulbar Paralysis ...	0	0	0	0	0	0	0	0	1	0	0	0	1
Cerebral Embolism ...	0	0	0	0	0	0	0	2	0	0	0	0	2
" Tumour ...	0	0	0	0	0	0	0	1	0	0	0	0	1
" Softening ...	0	0	0	0	0	0	0	0	3	0	1	0	4
" Abscess ...	0	0	0	0	0	1	0	1	0	0	0	0	2
Convulsions ...	0	0	2	0	0	0	0	0	0	0	0	0	72
Chorea ...	0	0	0	0	0	1	0	0	0	0	0	0	1
Epilepsy ...	0	0	1	0	0	1	0	0	1	0	0	0	3
Multiple Sclerosis ...	0	0	0	0	0	0	1	0	0	0	0	0	1
Locomotor Ataxy ...	0	0	0	0	0	0	0	0	1	0	0	0	1
Peripheral Neuritis ...	0	0	0	0	0	1	1	2	1	0	0	0	5
Heat Apoplexy ...	0	0	0	0	0	0	0	0	1	0	0	0	1
DISEASES OF ORGANS OF SPECIAL SENSE.													
Otitis Media ...	0	0	1	0	0	0	0	0	0	0	0	0	1
DISEASES OF ORGANS OF CIRCULATION.													
Endocarditis ...	0	0	0	0	1	0	2	2	0	0	0	0	5
Valvular Disease ...	0	0	0	0	1	2	0	4	2	3	0	0	12
Angina ...	0	0	0	0	0	0	0	0	0	1	0	0	1

DISEASES.	AGES AT DEATH.											TOTALS.	
	Age not stated	0 to 1	1 to 5	5 to 15	15 to 25	25 to 35	35 to 45	45 to 55	55 to 65	65 to 75	75 to 85		85 and upwards.
Peritonitis ...	0	0	0	0	1	0	0	0	0	0	0	0	1
Ascites ...	0	0	0	0	0	0	0	1	0	0	0	0	1
Cirrhosis of Liver ...	0	0	0	0	0	2	1	3	2	4	0	0	12
Intestinal Obs. ...	0	2	0	0	0	0	3	0	2	2	0	0	9
DISEASES OF GLANDULAR ORGANS OF UNCERTAIN USE.													
Exophthalmic Goitre ...	0	0	0	0	0	0	1	0	0	0	0	0	1
DISEASES OF URINARY ORGANS.													
Nephritis ...	0	0	4	1	0	1	0	2	1	2	0	0	11
Renal Calculus ...	0	0	0	0	0	1	0	0	0	0	0	0	1
Bright's Disease ...	0	0	0	0	1	2	2	1	4	3	0	0	13
Cystitis ...	0	0	0	0	0	0	0	2	0	3	0	0	5
Prostatic Enlargement ...	0	0	0	0	0	0	0	0	1	0	1	0	2
REPRODUCTIVE ORGANS.													
Male ...	0	0	0	0	0	0	0	0	0	0	0	0	0
Female—Vagina Ulceration ...	0	0	1	0	0	0	0	0	0	0	0	0	1
Ovarian Tumour ...	0	0	0	0	0	0	0	0	2	0	0	0	2
Fibroid ...	0	0	0	0	0	0	0	0	1	0	0	0	1
Uterine Hæmorrhage ...	0	0	0	0	1	0	0	0	0	0	0	0	1
Childbirth ...	0	0	0	0	0	3	2	0	0	0	0	0	5
Post Partum Hæmorrhage ...	0	0	0	0	0	0	1	0	0	0	0	0	1
Puerperal Eclampsia ...	0	0	0	0	1	0	0	0	0	0	0	0	1
Abortion ...	0	0	0	0	1	0	0	0	0	0	0	0	1
DISEASES OF BONES AND JOINTS.													
Caries of Spine ...	0	0	0	0	0	1	0	0	0	0	0	0	1

AGES AT DEATH.

DISEASES.

Age not stated.	0 to 1	1 to 5	5 to 15	15 to 25	25 to 35	35 to 45	45 to 55	55 to 65	65 to 75	75 to 85	85 and upwards.	TOTALS.
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Caries of Hip. ...

DISEASES OF INTEGUMENTARY SYSTEM.

Ulcer of Leg. ...

Abscess of Scalp. ...

Cellulitis. ...

Pemphigus. ...

VII.—VIOLENCE.

“Accidental Death” ...

Drowned... ...

Burns ...

Scalds ...

Homicide ...

Suicide

Asphyxia Suffocation ...

VIII.—ILL-DEFINED CAUSES.

Found Dead ...

Exhaustion ...

Asthenia... ...

Natural Causes ...

Wasting

Inanition ...

Not Specified ...

TOTAL...

1	483	248	73	87	103	111	126	169	150	59	18	1628
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DISEASES.							Uncor- rected.
I. SPECIFIC FEBRILE OR ZYMOTIC DISEASES :—							
1. Miasmatic	197
2. Diarrhœal	...	...	...	...	...	...	25
3. Septic	...	...	...	...	...	...	9
4. Venereal	...	...	...	...	...	...	7
II.—PARASITIC							
...	...	...	...	...	...	...	I
III.—DIETIC							
...	...	...	...	...	...	...	10
IV.—CONSTITUTIONAL							
...	...	...	...	...	...	...	265
V.—DEVELOPMENTAL							
...	...	...	...	...	...	...	169
VI.—LOCAL :—							
1. Nervous	...	...	...	...	...	...	184
2. Organs of Special Sense	...	...	...	...	...	...	I
3. Circulatory System	...	...	...	...	...	...	115
4. Respiratory System	...	...	...	...	...	...	358
5. Digestive System	...	...	...	...	...	...	141
6. Glandular Organs of Uncertain Use	...	...	...	...	...	...	I
7. Urinary Organs	...	...	...	...	...	...	32
8. Reproductive Organs	...	...	...	...	...	...	13
9. Bones and Joints	...	...	...	...	...	...	2
10. Skin	...	...	...	...	...	...	5
VII.—VIOLENCE							
...	...	...	...	...	...	...	84
VIII.—ILL-DEFINED CAUSES							
..	...	...	...	...	...	...	9
							1628

TABLE IV.

Shewing the number of Deaths at all ages in 1900, from certain Groups of Diseases, and proportions to 1,000 of Population, and to 1,000 Deaths from all causes; also the number of Deaths of Infants under one year of age from other groups of Diseases, and proportions to 1,000 Births and to 1,000 Deaths from all causes under one year.

DIVISION I.	Total Deaths	Deaths per 1000 of Popu- lation at all ages.	Deaths per 1000 of total Deaths at all ages.
1. Principal Zymotic Diseases	201	2.60	123
2. Pulmonary Diseases ..	359	4.5	220
3. Principal Tubercular Diseases	146	1.8	90
DIVISION II. (Infants under one year).	Total Deaths	Deaths per 1,000 of Births	Deaths per 1,000 of total Deaths under One Year.
4. Wasting Diseases	149	56	310
5. Convulsive Diseases ...	99	37	205

NOTES.

1. Includes Smallpox, Measles, Scarlet Fever, Diphtheria, Whooping Cough, Typhus, Enteric (or Typhoid), and Simple Continued Fevers, and Diarrhœa.
3. Includes Phthisis, Scrofula, Tuberculosis, Rickets, and Tabes.
4. Includes Marasmus, Atrophy, Debility, Want of Breast Milk, and Premature Birth.
5. Includes Hydrocephalus, Infantile Meningitis, Convulsions, and Teething.

TABLE V.

CORRECTED NUMBER OF DEATHS IN EACH WARD.

DISEASES.	Dowlais.	Peny-darren.	Merthyr Town.	Cyfarthfa.	Plymouth.	Merthyr Vale.	Union Workhouse	General Hospital.	TOTALS.
Small Pox	1	6	21	4	8	13	4	...	1
Measles	7	9	1	4	...	...	...	...	63
Scarlet Fever	2	...	17	6	7	7	...	...	3
Diphtheria	3	1	5	1	...	...	...	...	41
Pertussis	22	1	5	...	4	3	...	...	29
Influenza	1	5	11	4	6	7	1	...	18
Enteric	9	4	6	1	7	3	3	...	39
Diarrhoea	4	1	5	...	...	...	1	...	25
Venereal	1	...	2	1	1	...	...	...	7
Puerperal Fever	2	...	...	1	1	...	...	...	6
Septic	1	1	...	...	1	...	...	...	3
Hydatids	...	...	1	...	...	...	...	...	1
Dietic	1	2	5	1	1	...	...	...	10
Tubercle	39	11	41	6	7	14	21	1	140
Marasmus	5	8	15	3	3	6	8	...	48
Cancer	19	3	7	2	5	9	7	...	52
Other Constitutional Diseases	7	4	4	1	3	1	4	...	21

TABLE V.—Continued.

DISEASES.	Dowlais.	Peny- darren.	Merthyr Town.	Cyfarthfa.	Plymouth.	Merthyr Vale.	Union Workhouse	General Hospital.	TOTALS.
Developmental Diseases	...	...	...	...	...	...	...	...	...
Brain	37	21	52	8	18	22	10	1	169
Convulsions	41	12	26	4	9	7	13	1	113
Circulatory Organs	21	5	26	4	8	7	1	...	72
Respiratory Organs	23	12	28	7	11	15	19	...	115
Digestive Organs	105	33	89	32	37	43	19	1	359
Glandular Organs	29	23	30	10	13	33	1	2	141
Urinary Organs	...	...	1	...	...	...	...	...	1
Reproductive Organs	5	5	9	2	2	7	2	...	32
Skin, Bones, and Joints	2	2	6	...	1	2	...	...	13
Accidents	...	1	3	...	...	2	1	...	7
Homicide	11	2	32	0	6	15	3	7	76
Suicide	1	...	...	...	...	...	...	...	1
Ill-defined	1	1	2	1	1	...	...	...	6
...	...	2	2	...	3	2	...	...	9
	397	166	452	98	162	218	118	13	1624

REPORT OF CHIEF SANITARY INSPECTOR.

During the year 1900, Notices were served requiring the Abatement of the following Nuisances, &c., viz. :—

NATURE OF NUISANCE, &c.	No.
1. Houses reported as unfit for Habitation, &c., by the Medical Officer of Health under the Housing of the Working Classes Act ...	100
2. To provide Water Closet Accommodation and Slop Drains, and connect with Sewer ...	170
3. Choked, Dilapidated, and Filthy Closets ...	318
4. Defective Closet and Slop Drains ...	348
5. Untrapped Slop Drains ...	106
6. Broken Pans, and Syphons in Closets ...	110
7. Choked Slop Drains ...	51
8. Insufficient W.C. Accommodation, Surface and Slop Drains ...	43
9. Defective and Foul Gutters ...	43
10. Closet and Slop Drains unventilated, Defective Soil Pipes and Ventilation	115
11. Escape of Sewer Gas in House ...	9
12. Filthy Premises ...	12
13. Pigs kept to near Dwellings, &c. ...	22
14. Back Yards in bad repair and unpaved ...	338
15. Yard Traps imperfectly fixed and broken ...	8
16. Animals kept in such a state as to be a nuisance ...	35
17. Defective troughing and down pipes ...	55
18. Requiring Persons to Re-Licence Slaughter Houses ...	33
19. Accumulation of Manure, and to provide Receptacles for same ...	26
20. Cesspools full and overflowing ...	18
21. Closet Drain and Liquid Refuse from Stable discharging into River Taff and Tributaries ...	46
22. To disconnect rain water down pipes and waste pipes from Drains ...	13
23. Overcrowding ..	7
24. Filthy and undrained Urinals and to provide Urinal Accommodation ...	12
25. Slaughtering on Unlicensed Premises ...	1
Total ...	2039

Asphyxiator.

During the year 1900, 680 smoke tests were applied to drains connected with 1,145 houses, including those where cases of Infectious Diseases (Typhoid Fever and Diphtheria) have occurred. In almost all the places the drains were found to be defective. The work of making good the drains was carried out by the Owners, and in every instance they have been inspected and again tested out during the year of 16,638 feet of good drainage, with yarn and cement joints. Improvements have also been made in the ventilation of private drains, no less than 143 four-inch V.P. having been erected during the year.

Public Health Acts (Amendment) Act, 1890.

Since the adoption of this Act sixty one summonses have been issued against Occupiers of Houses, under Section 21, for neglecting to keep their sanitary conveniences or the approaches thereto in a proper state of cleanliness. A fine of 5s. was inflicted in each case.

Infectious Diseases.

During the year 170 Patients were admitted into the Merthyr and Pant Fever Hospitals, 88 at the former, and 82 at the latter. A list of Patients admitted into both Hospitals will be found on the following page.

Number of Houses Disinfected ...	228
Lots of Infected Bedding, &c., Stoved ...	180
“ “ “ Destroyed ...	18
Number of Schools Disinfected ...	24

JOHN THOMAS OWEN, C.S.I.,

Chief Sanitary Inspector.

SUPPLEMENTARY TABLE FOR ANNUAL REPORTS.

URBAN SANITARY DISTRICT OF MERTHYR TYDFIL.

Medical Officer of Health : Dr. C. E. G. SIMONS, M.B., M.S., D.P.H.

Date of first appointment, 1900.

Present Salary, £400.

Term of appointment, Five years.

Rateable Value of District for General District Rate, £244 6s 17s. 6d.

Water Supply—

Any extension or change, 1898 ? None.
 Portions of district inadequately supplied ? Pengairnddu, an out-lying district, and the only portion not supplied with water.
 Cases of Lead Poisoning in 1898 ? None.

Sewerage and Sewage Disposal—

Extensions or Improvements during 1898 ? None.

Excrement Disposal—

Are the Privy Middens, &c., cleansed by Sanitary Staff, by Contractors, or by Tenants ? Tenants Cleanse Cesspit Closets.
 Is the present arrangement satisfactory ? Yes.

Bye-Laws and Regulations—

Any change as to Bye-Laws, or as to Regulations under Dairies, Cowsheds and Milkshops Order. [If so, please forward a copy.] None.

Regulated Buildings, Trades, &c.—

	Number.	Are they Inspected, and if so, by whom ?	General Conditions.	Legal Proceedings (if any).
Common Lodging Houses ...	10	Supt. Townsend	Good	None
Houses let in Lodgings ...	...	...	...	...
Canal Boats ..	Regt. at Cardiff	John T. Owen (Cert. San. Insp.)	Good	...
Slaughter Houses	34	Do.	...	...
Bakehouses ...	30	Medical Officer	...	...
Dairies ..	180	John T. Owen	...	...
Cowsheds }			...	...
Milkshops ...	21	Do.	...	...

Offensive Trades—Horse Slaughter, String Gut Factory, Skin Yard, Chandlery, Marine Stores, Fish Frying.

Meteorological Observations (if any).

Taken in or near District

See Table of Rainfall.

Death Returns—

What corrections (if any) is made for non-residents dying within the District?

Return for non-residents, &c., made.

Are any returns obtained for deaths of residents occurring in Public Institutions—(Workhouses, Hospitals, &c.), outside the District?

No.

Deaths—Please state (a) Number of each sex.
(b) Number uncertified.

Male, 872 ; female, 756 ; = 1628

Births—Please state (a) Number of each sex.
(b) Number Illegitimate.(a) Male, 1255 ; female, 1403 ; = 2658
(b) „ 63**Hospital for Infectious Diseases - Two.**

Number of Beds	...	...	{	Pant Hospital, 24.
			}	Merthyr Hospital, 12.

Charges to Patients.

Union Pay for Pauper Patients.

Construction—Brick, Stone, Wood,
Iron &c.{ Pant Hospital, wood.
Merthyr Hospital, brick.**Adoptive Acts—**(1) Notification Act Adopted when ?
Diseases added.

7th January, 1891.

Bubonic Plague.

(2) Prevention Act.

18th March, 1891.

(3) Public Health Acts Amendment Act.
Adopted when ?

March 18th, 1891.

(4) Housing Working Classes Act.

March 18th, 1891.

(5) Private Street Act.

November 22nd, 1892.

House Drainage—

Closets. Approximate number of each kind in the District :

W.C., 10,000. Trough C., 22 (at Schools). Slop C (Waste Water C.), none.
Pan or Tub C., 180. Privy Middens covered, none ; uncovered, none. Number
of each of the above constructed during the year 1900? W.C., 333 (Plan Book).

Loans (if any)—

Sanctioned by Local Government Board during year?

	£
May 29th, 1900 —Recreation Ground Thomas Town Tips ...	5,000
March 17th, 1900.—For Town Hall and Public Offices	8,000
April 26th, 1900. - Sewerage Disposal Scheme, Troedyrhiw ...	755
March 28th, 1900 —Steam Disinfector Brecon Road Hospftal ...	540
Works of Water Supply Reservoir at Treharris	711

State what action has been taken with regard to the following matter :

(1) Closure of Houses unfit for habitation, 100.

(2) Seizure of Unsound Food, One.

(3) River Pollution, Taff River and Morlais Brook.

Notice given to Vaynor Council *re* Pollution by Sewage from Cefn of the Taff River.

TABLE FOR CHIEF INSPECTOR'S REPORT.

District : MERTHYR TYDFIL URBAN DISTRICT COUNCIL.	Dwelling Houses and Schools.	Foul Condition.	253	...	Structural Defect	6	...	Overcrowding.	...	Unfit for Habitation.	...	Slaughter-houses.	...	25	1126	105	77	19	23	73	1807	TOTALS.	Seizure of unwholesome food	...	1
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J. T. OWEN, C.S.I.,

Chief Sanitary Inspector.

